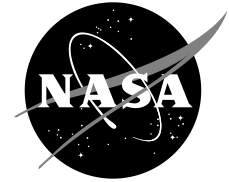


Turbomachinery and Propulsion Systems Division

National Aeronautics and
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Engine Systems Technology Branch



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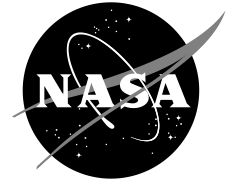
PRICE Milestones Since Last Meeting

1. Migration of PRICE Foundation Classes to the CORBA distributed object environment completed.
2. A set of semantically-meaningful parameter classes encapsulating the concepts of dimensionality was developed.
3. A set of geometry parameter classes following the CAPRI structuralization of CAD information was developed upon the dimensionally-aware parameter foundation.

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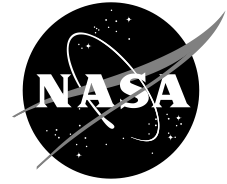
Semantically-Meaningful Dimensional Parameters

1. Dimensionality consists of three encapsulated elements:
 - a) A measurement system (English, metric, etc.) identified by code number,
 - b) A computable dimensional characteristic vector giving the participation of elemental dimensional components (length, mass, time, etc.), and
 - c) A power of application for that dimensional characteristic.
2. Parameters provide system-of-measurement-sensitive access functionality.
3. Operator overrides enforce conventional dimensionality rules. For example, addition and subtraction require aggregate dimensional congruence.
4. Assignment replicates all three dimensional components, rather than causing a dimensional conversion. Assignment does not introduce numerical conversion noise.
5. Object designating a kind of dimensionality require only characteristic congruence. Thus, a unit vector may still be encapsulated in a length vector object. Since the application of a unit vector's length characteristic is zero, the unit vector becomes invariant between systems of measurement.

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Geometry Parameter Objects

1. Based where appropriate upon the dimensionally-sensitive parameter classes.
2. Follows the structuralization of CAD information provided by the CAPRI (Haimes/MIT) effort.
3. Provides additional functionality to identify an arbitrary closed plane section of a geometric surface (if possible) and compute the area of that section. (A RBCC need.) The section is limited to tessellation accuracy.
4. Will also identify one or more arbitray open plane sections.
5. A method for computing the surface area of an arbitrary part of a geometric surface (another RBCC need) has been identified and will be implemented in the next round of improvements.
6. Several approaches for handling translating centerbody geometries (yet another RBCC need) have been identified. One will probably be selected and implemented in the next round or two of improvements.